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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Davis, Middleton, Jiang, and Bekesi**

Serial No.: **09/725,030** Group Art Unit: **1653**

Filed: **November 29, 2000** Examiner: **David Lukton**

Title: **ANTI-S-PHASE TUBULIN LIGANDS**

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On 18 August 2005

Paul K. Legaard, Ph.D. Reg. No. 38,534

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

REQUEST FOR RECONSIDERATION

In response to the Office Action dated May 24, 2005 in connection with the above-identified patent application, Applicants respectfully request reconsideration.

As a preliminary matter, a substitute oath/declaration deleting the claim for priority will be filed under separate cover.

I. The Claimed Invention Is Novel

Claims 26-29 are rejected under 35 U.S.C §102(a) as allegedly anticipated by Davis et al., Neoplasia, 1999, 1, 498-507 (hereinafter, the "Davis reference"). Applicants respectfully request reconsideration in view of the Declaration submitted herewith.

Although Applicants maintain that the Davis reference does not anticipate the claimed invention, solely to advance prosecution of the present application, Applicants submit herewith a

Declaration of Ashley S. Davis, Ph.D. under 37 CFR §1.131. The Office Action employs the Davis reference in a §102(a) rejection, indicating that it was published within one year of Applicants' filing date. The subject matter reported in the Davis reference is that of the Applicants. Consistent with M.P.E.P. §2132.01, Ashley S. Davis, Ph.D. declares that the additional authors of the Davis reference were under the direction of the inventors of the present patent application. Thus, Applicants have removed the Davis reference from consideration as prior art under 35 U.S.C. §102(a). In view of the foregoing, Applicants respectfully request that the rejection under 35 U.S.C § 102 be withdrawn.

II. The Claims Are Clear And Definite

Claims 26-29 are rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as their invention. Applicants traverse the rejection and respectfully request reconsideration because the claims are clear and definite.

According to the Office Action, the claims recite that inhibition of cell division can be achieved by contacting a cell with IAABE. The Office Action contends that the claims are indefinite as to whether an effective amount is used, or whether an amount which is less than effective is used. The Office Action asks "Is it the case that the claims encompass the use of ineffective amounts of IAABE..." (Office Action at page 7). Applicants respectfully disagree that the claims are indefinite.

Claim 26 recites "A method of inhibiting cell division comprising contacting a cell with 3-iodoacetamido benzoyl ethyl ester (3-IAABE)." "Ineffective amounts of IAABE" cannot be considered within the scope of the claims as they would not inhibit cell division. Logic dictates that if Applicants are claiming a method of inhibiting cell division by contacting a cell with 3-IAABE, then only "effective amounts" of 3-IAABE can be used. Persons of ordinary skill would have no difficulty in determining whether a particular amount of 3-IAABE meets this criteria. Accordingly, the claims are definite within the meaning of §112. *In re Mercier*, 185 U.S.P.Q. 774 (C.C.P.A. 1975) (claims sufficiently define an invention so long as one skilled in the art can determine what subject matter is or is not within the scope of the claims).

The Office Action also alleges that the recitation of the phrases "cell involved in restenosis," "cell involved in gout," and "cell involved in myelodisplasia" in claims 28 and 29 are indefinite. Applicants respectfully disagree.

One of skill in the art would understand what these phrases mean. Gout, restenosis, and myelodisplasia syndrome are clinical conditions caused by cellular events in particular types of cells. For example, one of skill in the art would understand that a cell involved in myelodisplasia syndrome is one that leads to such a syndrome, such as a leukemia cell. The same analysis would be carried out for cells involved in gout and restenosis. One of skill in the art with an understanding of these conditions would have no difficulty in determining whether a particular cell type is or is not involved in gout, restenosis, or myelodisplasia. Accordingly, the claims are definite within the meaning of §112. *In re Mercier, Id.*

In view of the foregoing, claims 26-29 are clear and definite. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. §112, second paragraph be withdrawn.

III. The Claimed Invention Is Supported by Ample Written Description

Claims 26, 28, and 29 appear to be rejected under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants traverse the rejection and respectfully request reconsideration because the specification provides ample written description supporting the claimed inventions.

The Office Action alleges that claim 26 recites that division of any and all cell types will be inhibited by IAABE. The Office Action further alleges that the cells would include, "fibroblasts, T-cells, red blood cells, lymphocytes, neuronal cells, epidermal cell, etc." (Office Action at page 3). The Office Action concludes that "it does not appear that descriptive support exists for inhibiting division of any and all cell types." (Office Action at page 3). Applicants respectfully disagree.

The standard for determining compliance with the Written Description requirement of section 112 is whether a claim defines an invention that is clearly conveyed to those skilled in the

art at the time the application was filed. See, for example, *In re Gosteli*, 872 F.2d 1008, 1012, 10 U.S.P.Q.2d 1614, 1618 (Fed. Cir. 1989). Further, it is established law that limitations appearing in claims need not be literally recited in the specification. The issue is not whether words used in the claims are present in the specification but, rather, whether the concept expressed by the words is present. *In re Anderson*, 176 U.S.P.Q. 331 (C.C.P.A. 1973). Furthermore, the Court of Appeals for the Federal Circuit recently reaffirmed that "descriptive support" is not necessary to satisfy the written description requirement. The Court stated:

> The descriptive text needed to meet these requirements [written description] varies with the nature and scope of the invention at issue, and with the scientific and technologic knowledge already in existence. The law must be applied to each invention that enters the patent process, for each patented advance is novel in relation to the state of the science. Since the law is applied to each invention in view of the state of relevant knowledge, its application will vary with differences in the state of knowledge in the field and differences in the predictability of the science.

(*Daniel J. Capon et al v. Zelig Eshhar et al., v. Jon Dudas*, 03-1480,1481, *p13-p14, (Fed. Cir., August 12, 2005) (Fed. Cir. BBS). The Court also stated, "When the prior art includes...information, precedent does not set a per se rule that the information must be determined afresh." (*Id.*, *p15). The prior art in the field of the present invention included the existence of the types of cells that the Examiner alleges are not described in the present application.

However, even in view of the foregoing, the present application clearly describes a method of inhibiting cell division comprising contacting a cell with 3-iodoacetamido benzoyl ethyl ester (see, for example, page 10). Thus, the specification clearly conveys a method of cell inhibition. One of skill in the art would clearly understand that Applicants were in possession of the invention at the time the application was filed, regardless of how many types of cells are described in the present application. Applicants respectfully assert that the Office Action is confusing the standards of enablement and written description in the present rejection.

The Office Action also alleges that although claim 28 recites that IAABE can inhibit division of a helminth cell, the application does not have descriptive support for the same. The Office Action points to page 2, last 5 lines of the specification that states that the IAAABE can be

used to treat an anti-helminth infection, but states, "this is not the same as an assertion that division or mitosis of any and all cell types within a helminth organism will be inhibited by IAABE" (Office Action at page 3). The question of whether "division or mitosis of any and all cell types within a helminth organism will be inhibited by IAABE" is a question of enablement, not written description as the Office Action alleges. The Office Action has not stated that a helminth cell is not described either explicitly or implicitly in the present application. Rather, the Office Action appears to imply that claim 28 is not enabled for inhibiting division or mitosis of any and all cell types within a helminth organism by IAABE. Written description and enablement are separate criteria in analyzing the patentability of a claim. The specification clearly conveys to one of skill in the art a method of inhibiting cell division in a helminth cell because it states that the present invention can be used against the helminth organism and that IAABE works by inhibiting cell division. Thus, one of skill in the art would understand that Applicants were in possession of a method that inhibits cell division of a helminth cell by contacting that cell with IAABE.

The Office Action also alleges that there is no explicit or implicit support for IAABE inhibiting cell division of a cell involved in restenosis and cell involved in gout (Claim 28). Applicants respectfully disagree. The original claims that were filed with the present application provide support for inhibiting a cell involved in restenosis and a cell involved in gout, such as originally filed claim 6 (now cancelled) and in the specification itself, such as, the Summary of the Invention (page 2). Thus, the claims are clearly described in the application such that one of skill in the art would understand that Applicants had possession of the claimed invention.

The Office Action further alleges that there is "no explanation provided as to how or where one draws the line between a cell that is involved (in restenosis or gout) and a cell which is not" (Office Action at page 4). Applicants respectfully disagree. Restenosis and gout are clinical conditions which are well known to the skilled artisan. Gout, for example, is a systemic disease (i.e., condition that occurs throughout the body) caused by the buildup of uric acid in the joints. An elevated blood level of uric acid (called hyperuricemia) occurs when the liver produces more uric acid than the body can excrete in the urine, or when a diet high in rich foods (e.g., red meat, cream sauces, and red wine) produces more uric acid than the kidneys can filter from the blood.

Thus, a cell that is either producing too much uric acid or that is affected by the buildup in uric acid would be a cell involved in gout. Restenosis, for example, is a re-narrowing or blockage of an artery at the same site where treatment, such as a balloon angioplasty or stent procedure, has already taken place. Thus, a cell that is involved in this renarrowing process is involved in restenosis. One of skill in the art would understand this differentiation between cells involved in these conditions and that of a blood-clotting disorder, such as hemophilia.

The Office Action also alleges that there is no descriptive support for "inhibiting division of a 'cell involved in myelodisplasia syndrome' (claim 29)" (Office Action at page 4). Applicants, again, respectfully disagree. Applicants describe, for example, inhibiting a leukemia cell and a lymphoma cell, both of which would be considered to be a cell involved in myelodisplasia syndrome (see, for example, page 12). Thus, the claim is sufficiently described in the specification.

In view of the foregoing, Applicants respectfully request that the rejection under 35 U.S.C. §112, first paragraph, as allegedly failing to provide sufficient written description be withdrawn.

IV. The Claimed Invention Is Sufficiently Enabled

Claims 26-29 are rejected under 35 U.S.C. §112, first paragraph as allegedly failing to provide an enabling disclosure. The Office Action mistakenly asserts that it would require undue experimentation for one skilled in the art to "inhibit mitosis in any and all cell types" (Office Action at page 6). Applicants traverse the rejection and respectfully request reconsideration because one skilled in the art would be able to practice the claimed invention without being required to perform undue experimentation.

The Office Action acknowledges that Applicants have demonstrated inhibition of mitosis of a few cell types including CEM cells, EL4 lymphoma cells, and prostate cancer cells. The Office action concludes, however, that "it does not follow therefrom that mitosis of any and all cell types will be inhibited" (Office Action at page 4). The Office Action attempts to support its argument by using examples of other compounds unrelated to IAABE that can have differing

effects on different cells and alleges, therefore, that the presently claimed methods are not enabled.

The enablement requirement of §112 is satisfied as long as a disclosure contains sufficient information that persons of ordinary skill in the art having the disclosure before them would be able to make and use the invention. *In re Wands*, 8 U.S.P.Q.2d 1400 (Fed. Cir. 1988) (the legal standard for enablement under §112 is whether one skilled in the art would be able to practice the invention without undue experimentation). In applying the enablement requirement, the "invention" that must be enabled is that defined by the claims. The enablement requirement is met if the specification enables the skilled artisan to determine, without undue experimentation, which species encompassed by a generic claim are effective for their intended purpose. *In re Angstadt*, 537 F.2d 498 (C.C.P.A. 1976). In *Angstadt*, the claimed invention involved a method of catalytically oxidizing hydrocarbons to form hydroperoxides. Noting that catalytic processes are unpredictable, the Court of Customs and Patent Appeals reversed the Board's decision affirming the Examiners' rejection for lack of enablement because one of ordinary skill in the art could determine the effectiveness of a claimed catalyst by following the procedures outlined in the specification. The court explained that:

> [i]f one skilled in this art wished to make and use a transition metal salt other than those disclosed in appellants' 40 runs [examples], he would merely read appellants' specification for direction how to make and use the catalyst complex to oxidize the alkylaromatic hydrocarbons, and could then determine whether hydroperoxides are, in fact, formed...Since appellants have supplied the list of catalysts and have taught how to make and how to use them, we believe that the experimentation required to determine which catalysts will produce hydroperoxides would not be undue and certainly would not 'require ingenuity beyond that to be expected of one of ordinary skill in the art.'

Id. at 503 (citations omitted). The court also explained that § 112, first paragraph does not require disclosure of test data for every species covered by a claim because such a requirement would necessitate patent applications with thousands of examples and "would force an inventor seeking adequate patent protection to carry out a prohibitive number of actual experiments." *Id.* at 502. The court concluded that the evidence as a whole, including both the inoperative and operative examples, negated the PTO position that persons of ordinary skill in the art, given its

unpredictability, would have to engage in undue experimentation to determine which catalysts would work for their intended purpose. *Id.* Moreover, in unpredictable arts, to fulfill the enablement requirement, the specification need not provide guidance that transcends the level of knowledge of those skilled in the art. *Angstadt*, 537 F.2d at 504.

The Office Action has clearly done what the court has stated is not necessary to satisfy the enablement requirement by requiring that Applicants demonstrate that IAABE inhibits the division of every type of cell. Clearly that is not required as was demonstrated in *In re Wands* where only a small percentage of the embodiments worked.

Additionally, the M.P.E.P. states,

> In order to make a rejection, the examiner has the initial burden to establish a reasonable basis to question the enablement provided for the claimed invention. In re Wright, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993) (***examiner must provide a reasonable explanation as to why the scope of protection provided by a claim is not adequately enabled by the disclosure***).

(MPEP §2164.04, emphasis added). The Office Action has failed to provide a "reasonable explanation" as to why the pending claims utilizing IAABE to inhibit the division of a cell are not enabled. Rather, the Office Action has used compounds that are ***completely unrelated*** to IAABE in support of its enablement rejection. IAABE is a benzoyl ethyl ester, while lysophosphatidic acid is a lipid and dexamethasone is a steroid. The compounds described in the office action (lysophosphatidic acid and dexamethasone) are not even in the same class as IAABE. Thus, these compounds have no bearing on the ability of IAABE to inhibit cell division. The Office Action, therefore, has failed to provide any reasonable explanation regarding the alleged lack of enablement of the claimed methods.

Furthermore, the specification clearly describes how to make and/or use the claimed compound in the methods described in the claims by an actual reduction to practice and by other descriptions contained within the specification. The Office Action has failed to provide any reasonable evidence as to why Applicants' specification is incorrect or not enabled and without such evidence the rejection must be withdrawn.

The Office Action also states that if IAABE were effective to inhibit mitosis of all cell

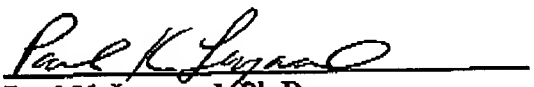
types, "the ensuing illness induced thereby would be more severe that [*sic*] the disease prior to treatment." (Office Action at page 6). Applicants respectfully assert that the Examiner's role is not to evaluate the safety and/or efficacy of any type of cell inhibition. Such evaluation is left to the Food and Drug Administration (FDA) and is not part of the Examiner's patentability evaluation of any claim.

Thus, there is no reason to believe that one skilled in the art would be required to perform any amount of undue experimentation to make and use the claimed invention. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. §112, first paragraph be withdrawn.

V. Conclusion

In view of the foregoing, Applicants respectfully submit that the claims are in condition for allowance. An early notice of the same is earnestly solicited. The Examiner is invited to contact Applicants' undersigned representative at (215) 665-6914 if there are any questions regarding Applicants' claimed invention.

Respectfully submitted,



Paul K. Legaard, Ph.D.
Registration No. **38,534**

Date: **18 August 2005**

COZEN O'CONNOR
1900 Market Street
Philadelphia, PA 19103-3508
Telephone: (215) 665-6928
Facsimile: (215) 701-2029

Attachments: Declaration of Ashley S. Davis under 37 C.F.R § 1.131